

**IN THE CLAIMS:**

Please amend claim 58 as follows.

1. (Previously Presented) A method, comprising:  
sending a first request message having a first selected scope;  
analyzing whether a confirm message is received from a discovered resource within the first selected scope in response to the first request message; and  
sending a second request message having a second selected scope when a confirm message is not received from a discovered resource in response to the first request message, the second selected scope being greater than the first selected scope, wherein the method is configured to provide resource discovery.
2. (Previously Presented) The method of claim 1, wherein the analyzing further comprises  
setting a timer in response to the first request message being sent,  
detecting whether a confirm message is received before the timer expires, and  
terminating the resource discovery procedure when a confirm message is received prior to the expiration of the timer.
3. (Previously Presented) The method of claim 2, wherein the detecting further comprises

determining whether a scope increase is allowed when a confirm message is not received before the expiration of the timer,

terminating the resource discovery procedure when a scope increase is not allowed,

increasing the scope to the second selected scope when a scope increase is allowed, and

resetting the timer.

4. (Previously Presented) The method of claim 3, wherein the determining further comprises inspecting fields of a response message and determining whether a scope increase is allowed based upon the response message and policies included therein.

5. (Previously Presented) The method of claim 1, wherein the sending further comprises transmitting the request message to a known multicast group.

6. (Previously Presented) The method of claim 1, further comprising:  
configuring the selected scope to comprise a hop count that represents a number of nodes in a multicast tree in which the request message propagates.

7. (Previously Presented) The method of claim 6, further comprising:

decrementing the hop count at a node in the multicast tree receiving the request message; and

forwarding the request message to a next node in the multicast tree.

8. (Previously Presented) The method of claim 1, wherein the sending the request message further comprises sending parameters for analysis by a node receiving the request message.

9. (Previously Presented) The method of claim 8, wherein the sending the parameters further comprises sending hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

10. (Previously Presented) The method of claim 8, wherein sending the parameters further comprises sending destination parameters, the destination parameters being used by a resource being discovered using the request message to determine whether the resource responds using a confirm or a reject message.

11. (Previously Presented) The method of claim 1, further comprising:  
receiving the request message at a node in a multicast tree;  
decrementing a hop count included in the scope;

modifying hop-by-hop parameters;  
determining whether the hop count is equal to zero;  
passing the request message down the multicast tree when the hop count is not equal to zero;  
examining destination parameters in the request message; and  
unicasting a response message in response to the request message.

12. (Previously Presented) The method of claim 11, wherein the unicasting the response message comprises

unicasting a decision field that indicates whether the response is a confirm message or a reject message,

unicasting a returned hop count representing a value of the hop count field at the time the request message was received by the node, and

unicasting a returned hop-by-hop parameter field representing a value of hop-by-hop parameters received by the node in the request message after modification by the node.

13. (Previously Presented) A method, comprising:  
sending a first request message having a first selected scope to a known multicast group;  
setting a timer responsive to the first request message being sent;

detecting whether a confirm message is received from an endpoint before the timer expires;

terminating endpoint locating when a confirm message is received from an endpoint prior to the expiration of the timer;

determining whether a scope increase is allowed when a confirm message is not received from an endpoint before the expiration of the timer;

terminating endpoint locating when a scope increase is not allowed;

increasing the scope to the second selected scope when a scope increase is allowed;

resetting the timer; and

sending a second request message having the second selected scope when a confirm message is not received from an endpoint in response to the first request message, the second selected scope being greater than the first selected scope,

wherein the method is configured to locate a suitable endpoint for setting up a connection.

14. (Previously Presented) The method of claim 13, wherein the determining further comprises inspecting fields of a response message and determining whether a scope increase is allowed based upon the response message and policies included therein.

15. (Previously Presented) The method of claim 13, wherein the having the selected scope comprises having a hop count representing a number of nodes in a multicast tree in which the request message propagates.

16. (Previously Presented) The method of claim 15, further comprising:  
decrementing the hop count at a node in the multicast tree receiving the request message; and  
forwarding the request message to a next node in the multicast tree.

17. (Previously Presented) The method of claim 13, wherein the sending the request message comprises sending parameters for analysis by a node receiving the request message.

18. (Previously Presented) The method of claim 17, wherein the sending the parameters further comprises sending hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

19. (Previously Presented) The method of claim 17, wherein the sending the parameters further comprises sending destination parameters, the destination parameters

being used by a resource being discovered using the request message to determine whether the resource responds using a confirm or a reject message.

20. (Previously Presented) The method of claim 13, further comprising:

- receiving the request message at a node in a multicast tree;
- decrementing a hop count included in the scope;
- modifying hop-by-hop parameters;
- determining whether the hop count is equal to zero;
- passing the request message down the multicast tree when the hop count is not equal to zero;
- examining destination parameters in the request message; and
- unicasting a response message in response to the request message.

21. (Previously Presented) The method of claim 20, wherein the unicasting the response message comprises

- unicasting a decision field that indicates whether the response is a confirm message or a reject message,
- unicasting a returned hop count representing a value of the hop count field at the time the request message was received by the node; and

unicasting a returned hop-by-hop parameter field representing a value of hop-by-hop parameters received by the node in the request message after modification by the node.

22. (Previously Presented) An article of manufacture comprising a computer readable medium having instructions for causing a processor to locate a resource for establishing a connection thereto according to a method, the method comprising:

sending a first request message having a first selected scope;

analyzing whether a confirm message is received from a discovered resource within the first selected scope in response to the first request message; and

sending a second request message having a second selected scope when a confirm message is not received from a discovered resource in response to the first request message, the second selected scope being greater than the first selected scope,

wherein the article of manufacture is configured to provide resource discovery using multicast scope selection.

23. (Previously Presented) The article of manufacture of claim 22, wherein the analyzing further comprises

setting a timer in response to the first request message being sent,

detecting whether a confirm message is received before the timer expires, and



terminating the resource discovery procedure when a confirm message is received prior to the expiration of the timer.

24. (Previously Presented) The article of manufacture of claim 23, wherein the detecting further comprises

determining whether a scope increase is allowed when a confirm message is not received before the expiration of the timer,

terminating the resource discovery procedure when a scope increase is not allowed,

increasing the scope to the second selected scope when a scope increase is allowed, and

resetting the timer.

25. (Previously Presented) The article of manufacture of claim 24, wherein the determining further comprises inspecting fields of a response message and determining whether a scope increase is allowed based upon the response message and policies included therein.

26. (Previously Presented) The article of manufacture of claim 22, wherein the sending further comprises transmitting the request message to a known multicast group.

27. (Previously Presented) The article of manufacture of claim 22, wherein the selected scope comprises a hop count, the hop count representing a number of nodes in a multicast tree in which the request message propagates.

28. (Previously Presented) The article of manufacture of claim 27, wherein the method further comprises decrementing the hop count at a node in the multicast tree receiving the request message and forwarding the request message to a next node in the multicast tree.

29. (Previously Presented) The article of manufacture of claim 22, wherein the request message further comprises parameters for analysis by a node receiving the request message.

30. (Previously Presented) The article of manufacture of claim 29, wherein the parameters further comprise hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

31. (Previously Presented) The article of manufacture of claim 29, wherein the parameters further comprise destination parameters, the destination parameters

being used by a resource being discovered using the request message to determine whether the resource responds using a confirm or a reject message.

32. (Previously Presented) The article of manufacture of claim 22, wherein the method further comprises:

- receiving the request message at a node in a multicast tree;
- decrementing a hop count included in the scope;
- modifying hop-by-hop parameters;
- determining whether the hop count is equal to zero;
- passing the request message down the multicast tree when the hop count is not equal to zero;
- examining destination parameters in the request message; and
- unicasting a response message in response to the request message.

33. (Previously Presented) The article of manufacture of claim 32, wherein the response message comprises

- a decision field that indicates whether the response is a confirm message or a reject message,
- a returned hop count representing a value of the hop count field at the time the request message was received by the node, and

a returned hop-by-hop parameter field representing a value of hop-by-hop parameters received by the node in the request message after modification by the node.

34. (Previously Presented) A discoverer, comprising:  
a discovery unit; and  
an application, operatively coupled to the discovery unit, the application configured to send a notification to the discovery unit to locate an endpoint application;  
wherein the discovery unit is configured to send a first request message having a first selected scope to a multicast group, analyze whether a desired confirm message is received from an endpoint application in response to the first request message, and send a second request message having a second selected scope when a desired confirm message is not received from the endpoint application in response to the first request message, wherein the second selected scope is greater than the first selected scope.

35. (Previously Presented) The discoverer of claim 34, further comprising:  
a timer configured to set a window in which to receive the desired confirm message, wherein the discovery unit is configured to set the timer in response to the first request message being sent, to detect whether a confirm message is received before the timer expires, and to terminate the location of an endpoint when a confirm message is received prior to the expiration of the timer.

36. (Previously Presented) The discoverer of claim 35, wherein the discovery unit is configured to determine whether a scope increase is allowed when a desired confirm message is not received before the expiration of the timer, to terminate the location of an endpoint when a scope increase is not allowed, and to increase the scope to the second selected scope and reset the timer when a scope increase is allowed.

37. (Previously Presented) The discoverer of claim 36, wherein the discovery unit is configured to determine whether a scope increase is allowed when a confirm message is not received before the expiration of the timer based upon the received response message and policies included therein.

38. (Previously Presented) The discoverer of claim 34, wherein the selected scope comprises a hop count, and the hop count represents a number of nodes in a multicast tree in which the request message propagates.

39. (Previously Presented) The discoverer of claim 34, wherein the request message further comprises parameters for analysis by a node receiving the request message.

40. (Previously Presented) The discoverer of claim 39, wherein the parameters further comprise hop-by-hop parameters, the hop-by-hop parameters being

modified by intermediate nodes during the propagation of the request message in the multicast tree.

41. (Previously Presented) The discoverer of claim 39, wherein the parameters further comprise destination parameters, the destination parameters being used by an endpoint to determine whether the resource responds using a confirm or a reject message.

42. (Previously Presented) The discoverer of claim 34, wherein the application and the discovery unit are co-located.

43. (Previously Presented) The discoverer of claim 34, wherein the application and the discovery unit are not co-located.

44. (Previously Presented) The discoverer of claim 43, wherein the discovery unit comprises at least one of a base transceiver station, a base station controller, or a mobile services switching center.

45. (Previously Presented) The discoverer of claim 43, wherein the application comprises a mobile terminal.

46. (Previously Presented) A discoverer, comprising:  
a discovery means for providing resource discovery; and  
a notification means operatively coupled to the discovery means, for sending a notification to the discovery means to locate an endpoint application;  
wherein the discovery means comprises  
means for sending a first request message having a first selected scope to a multicast group,  
means for analyzing whether a desired confirm message is received from an endpoint application in response to the first request message, and  
means for sending a second request message having a second selected scope when a desired confirm message is not received from the endpoint application in response to the first request message,  
wherein the second selected scope is greater than the first selected scope.

47. (Previously Presented) The discoverer of claim 46, further comprising:  
a timer for setting a window in which to receive the desired confirm message,  
wherein the discovery means further comprises  
means for setting the timer in response to the first request message being sent,  
means for detecting whether a confirm message is received before the timer expires, and

means for terminating the location of an endpoint when a confirm message is received prior to the expiration of the timer.

48. (Previously Presented) The discoverer of claim 47, wherein the discovery means further comprises

means for determining whether a scope increase is allowed when a desired confirm message is not received before the expiration of the timer,

means for terminating the location of an endpoint when a scope increase is not allowed,

means for increasing the scope to the second selected scope when a scope increase is allowed, and

means for resetting the timer.

49. (Previously Presented) The discoverer of claim 48, wherein the discovery means further comprises

means for determining whether a scope increase is allowed when a confirm message is not received before the expiration of the timer based upon the received response message and policies included therein.



50. (Previously Presented) The discoverer of claim 46 wherein the selected scope comprises a hop count, and the hop count represents a number of nodes in a multicast tree in which the request message propagates.

51. (Previously Presented) The discoverer of claim 46, wherein the request message further comprises parameters for analysis by a node receiving the request message.

52. (Previously Presented) The discoverer of claim 51, wherein the parameters further comprise hop-by-hop parameters, the hop-by-hop parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

53. (Previously Presented) The discoverer of claim 51, wherein the parameters further comprise destination parameters, the destination parameters being used by an endpoint to determine whether the resource responds using a confirm or a reject message.

54. (Previously Presented) The discoverer of claim 46, wherein the notification means and the discovery means are co-located.

55. (Previously Presented) The discoverer of claim 46, wherein the notification means and the discovery means are not co-located.

56. (Previously Presented) The discoverer of claim 55, wherein the discovery means comprises at least one of a base transceiver station, a base station controller, or a mobile services switching center.

57. (Previously Presented) The discoverer of claim 55, wherein the notification means comprises a mobile terminal.

58. (Currently Amended) A computer program product encoding a computer program of instructions stored in a computer readable medium for causing a processor to locate a resource for establishing a connection thereto according to a method, the method comprising:

    sending a first request message having a first selected scope;

    analyzing whether a confirm message is received from a discovered resource within the first selected scope in response to the first request message; and

    sending a second request message having a second selected scope when a confirm message is not received from a discovered resource in response to the first request message, the second selected scope being greater than the first selected scope.

59. (Previously Presented) The computer program product of claim 58, wherein the analyzing further comprises

- setting a timer in response to the first request message being sent,
- detecting whether a confirm message is received before the timer expires, and
- terminating the resource discovery procedure when a confirm message is received prior to the expiration of the timer.

60. (Previously Presented) The computer program product of claim 59, wherein the detecting further comprises

- determining whether a scope increase is allowed when a confirm message is not received before the expiration of the timer,
- terminating the resource discovery procedure when a scope increase is not allowed,
- increasing the scope to the second selected scope when a scope increase is allowed, and
- resetting the timer.

61. (Previously Presented) The computer program product of claim 60, wherein the determining further comprises inspecting fields of a response message and determining whether a scope increase is allowed based upon the response message and policies included therein.

62. (Previously Presented) The computer program product of claim 58, wherein the sending further comprises transmitting the request message to a known multicast group.

63. (Previously Presented) The computer program product of claim 58, wherein the selected scope comprises a hop count, the hop count representing a number of nodes in a multicast tree in which the request message propagates.

64. (Previously Presented) The computer program product of claim 63, wherein the method further comprises decrementing the hop count at a node in the multicast tree receiving the request message and forwarding the request message to a next node in the multicast tree.

65. (Previously Presented) The computer program product of claim 58, wherein the request message further comprises parameters for analysis by a node receiving the request message.

66. (Previously Presented) The computer program product of claim 65, wherein the parameters further comprise hop-by-hop parameters, the hop-by-hop

parameters being modified by intermediate nodes during the propagation of the request message in the multicast tree.

67. (Previously Presented) The computer program product of claim 65, wherein the parameters further comprise destination parameters, the destination parameters being used by a resource being discovered using the request message to determine whether the resource responds using a confirm or a reject message.

68. (Previously Presented) The computer program product of claim 58 wherein the method further comprises

- receiving the request message at a node in a multicast tree,
- decrementing a hop count included in the scope,
- modifying hop-by-hop parameters,
- determining whether the hop count is equal to zero,
- passing the request message down the multicast tree when the hop count is not equal to zero,
- examining destination parameters in the request message, and
- unicasting a response message in response to the request message.

69. (Previously Presented) The computer program product of claim 68, wherein the response message comprises a decision field that indicates whether the

response is a confirm message or a reject message, a returned hop count representing a value of the hop count field at the time the request message was received by the node, and a returned hop-by-hop parameter field representing a value of hop-by-hop parameters received by the node in the request message after modification by the node.